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EXAMINER

STEPHANY, TIMOTHY J

ART UNIT PAPER NUMBER

2622

DATE MAILED: 06/07/2004

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/521,588

Applicant(s)

STATT, DAVID J.

Examiner

Timothy J. Stephany

Art Unit

2622

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 March 2000 and 19 April 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) 3 and 6 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on _____ is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Response to Amendment

Applicant's arguments, see Amendment A, filed April 19, 2004, with respect to specification informalities have been fully considered and are persuasive. The objections to the specification have been withdrawn.

Applicant's arguments, see Amendment A, filed April 19, 2004, with respect to drawing objections have been fully considered and are persuasive. The objections to the drawings have been withdrawn.

Applicant's arguments, see Amendment A, filed April 19, 2004, with respect to the claim 11 objection have been fully considered and are persuasive. The objections to claim 11 has been withdrawn.

Applicant's arguments, see Amendment A, filed April 19, 2004, with respect to 35 claims 7-12 USC 112 rejection have been fully considered and are persuasive. The USC 112 rejections to claims 7-12 have been withdrawn.

Applicant's arguments, see Amendment A, filed April 19, 2004, with respect to 35 claims 3-6 USC 112 rejection have been fully considered and are persuasive. The USC 112 rejections to claims 3-6 have been withdrawn.

Response to Arguments

Applicant's arguments filed April 19, 2004 have been fully considered but they are not persuasive. The prior art Liu makes reference to neutral and color patches. Any color patches that deviate in their mix of red, green and blue code values will be non-neutral. Those patches that have equal amounts of red, green and blue code values will be neutral. The specific arrangement and groupings of the patches on a test page qualifies as design choice when the arrangement does not constitute a characteristic of the test page that has inventive utility.

The arguments made that these non-neutral patches deviate somewhat from neutral does not distinguish them to any degree from the case of using of any test page that incorporates a large number of color patches where such patches represent a sampling of the color space. In addition, the reference Wan ('568) cited in the IDS from March 9, 2000 includes a reference to color patches that are near-neutral and could thus be incorporated into the Liu reference to produce such a configuration as is suggested in the specification.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 8 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The phrase "(2) the common plane is further out on the

neutral axis than the corresponding neutral point," is unclear as it is written, but has been interpreted to mean "the common plane extends out from the neutral axis" and should be changed to this or an accurate statement of intended meaning in order to overcome the 35 U.S.C. 112 rejection. The phrase "(4) all four non-neutral points are roughly equidistant from each other." is implied in the prior statement that the points are arranged in a square. This already suggests that the points are roughly equidistant and thus the meaning of the further apparently redundant statement is unclear.

Claim 8 provides for the use of the selection of at least one second, third and fourth patch code values, but, since the claim does not set forth any steps involved in the method/process, it is unclear what method/process applicant is intending to encompass. A claim is indefinite where it merely recites a use without any active, positive steps delimiting how this use is actually practiced.

Claim 8 is rejected under 35 U.S.C. 101 because the claimed recitation of a use, without setting forth any steps involved in the process, results in an improper definition of a process, i.e., results in a claim which is not a proper process claim under 35 U.S.C. 101. See for example *Ex parte Dunki*, 153 USPQ 678 (Bd.App. 1967) and *Clinical Products, Ltd. v. Brenner*, 255 F. Supp. 131, 149 USPQ 475 (D.D.C. 1966).

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

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(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

Claims 1 and 5 are rejected under 35 U.S.C. 102(e) as being anticipated by Liu ('469).

Liu discloses a method and apparatus for calibrating a digital printer and teaches the use of a calibration target having a number of neutral patches at varying density levels, or color patches, or a combination of neutral and color patches (col. 6, lines 14-17) corresponding to the color patches consisting of subsets of neutral and non-neutral density values.

Also that this is done with varying amounts of red, green and blue (Fig. 7) and printed on a digital printer (col. 6, lines 26-30) which is the color reproduction apparatus. Also that the densities of said patches are measured (col. 6, lines 45-47), that an error criterion is determined (col. 7, lines 1-3) and that this error criterion is minimized by use of the appropriate calibration function in the printer (col. 8, lines 1-7) which is equivalent to modifying the converting process of the reproduction apparatus so as to reduce the errors.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 7, 9 and 11 are rejected under 35 U.S.C. 102(b) as being anticipated by Rolleston ('613).

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Regarding **claim 9** and (thus **claim 7**), Rolleston discloses a method and a system (Figure 1) that is used for calibration a printer (abstract) wherein a color test page is used (Figure 2), that test page comprising a selection of a large number of cyan, magenta and yellow patches distributed throughout the printer color space (col. 5, lines 52-59). Also it is stated that this printed output page can be said to be defined in terms of R, G and B (col. 4, lines 64-66). These patches represent patched dispersed throughout the entire printer color gamut (col. 6, lines 305) so that the patches that contain Red, Green and Blue values are different from each other, in order to achieve this. In addition, that the Neutral patches are distributed throughout the neutral color space in order to be able to perform gray balance (col. 5, lines 37-39). In this regard, the patches represent a plurality of first patches (neutral) that are different from each other, a plurality of second patches (red) that are different from each other, a plurality of third patches (green) that are different from each other, and a plurality of fourth patches (blue) that are different from each other.

Regarding **claim 11**, Rolleston discloses that the patches can be printed onto one or more sheets of receiving material (col. 6, lines 5-7).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1 and 5 are rejected under 35 U.S.C. 103(a) as being obvious over Liu ('469) in view of Wan ('568).

Liu discloses a method and apparatus for calibrating a digital printer and teaches the use of a calibration target having a number of neutral patches at varying density levels, or color patches, or a combination of neutral and color patches (col. 6, lines 14-17) corresponding to the color patches consisting of subsets of neutral and non-neutral density values.

Also that this is done with varying amounts of red, green and blue (Fig. 7) and printed on a digital printer (col. 6, lines 26-30), which is the color reproduction apparatus. Also that the densities of said patches are measured (col. 6, lines 45-47), that an error criterion is determined (col. 7, lines 1-3) and that this error criterion is minimized by use of the appropriate calibration function in the printer (col. 8, lines 1-7) which is equivalent to modifying the converting process of the reproduction apparatus so as to reduce the errors.

Liu fails to disclose explicitly that the selection of patches involved include those that vary "somewhat from neutral values". Considering that this could mean that the patches are near-neutral and that this is not implied in the Liu reference, that the Wan reference adds a selection of near-neutral patches (col. 3, lines 35-39 and Figure 3).

Liu & Wan are combinable because they are from the same field of endeavor and thus constitute analogous art, being that of printer color calibration.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to use patches with neutral and non-neutral color density values and measuring those values and producing error signals that are used to produce a more accurate output, wherein the non-neutral patches are near-neutral.

The suggestion/motivation for doing so would have been that any number of color patches that are applied to one type of test image for any intended test, can be applied on another test image for use with another intended test. The purposes of the test suggest the patches needed and that those that have been developed for other purposes can be immediately applied, even without creating a new test page.

Therefore, it would have been obvious to combine Liu with Wan to obtain the invention as specified in claims 1 and 5.

Claim 2 is rejected under 35 U.S.C. 103(a) as being obvious over Liu ('469) in view of Granger ('942). Liu discloses the method and apparatus in the claim 1 rejection above. Liu does not disclose expressly that data interpolation is performed from at least three of the patches wherein the three patches represent a sampling of red, green, blue and black color codes.

Granger adds that the color patches that represent a sampling (col. 11, lines 21-23) that can be expressed as a sampling of RGB (col. 11, lines 61-63) are then constructed into a table where interpolation can be performed on the nearest three or four points in the color space (col. 12, lines 3-7). The black color code is already included in the RBG color code when $R=G=B$.

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Liu & Granger are combinable because they are from the same field of endeavor and thus constitute analogous art, being that of printer color processing.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to use code values of red, green and blue and to interpolate from at least three patches to produce a result close to the intended color density.

The suggestion/motivation for doing so would have been that methods of interpolation are commonly applied in color spaces and that such techniques can be easily adapted from use with any one intent to another.

Therefore, it would have been obvious to combine Liu with Granger to obtain the invention as specified in claim 2.

Claim 4 is rejected under 35 U.S.C. 103(a) as being obvious over Liu ('469) in view of Johnson ('866). Liu discloses the method and apparatus in the claim 1 rejection above. Liu does not disclose expressly target values for red density, green density and blue density as a function of red drive code value, green drive code value and blue drive code value.

Johnson discloses that there are densities D_r , D_g , and D_b , that are a function of R_4 , G_4 , and B_4 (col. 4, lines 57-59), which are in turn dependent upon R_3 , G_3 and B_3 (col. 4, lines 63-65), which are the signals provided to the imaging system (col. 4, lines 20-21) which is the reproduction apparatus. And that this is done in the process to minimize the errors (col. 6, lines 31-36).

Liu & Johnson are combinable because they are from the same field of endeavor and thus constitute analogous art, being that of printer color processing.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to use target values for red density, green density and blue density as a function of red drive code value, green drive code value and blue drive code value.

The suggestion/motivation for doing so would have been density given as a function of code value requires and constitutes no specific adaptation in order to be incorporated into the proposed invention.

Therefore, it would have been obvious to combine Liu with Johnson to obtain the invention as specified in claim 4.

Claims 8, 10 and 12 are rejected under 35 U.S.C. 103(a) as being obvious over Rolleston ('613).

Regarding **claim 8**, the recitation of a system that comprises patches of neutral, red, green and blue code values as set forward in claim 7 has been discussed above. The color space as defined in Rolleston has already been shown to constitute one corresponding to red, green and blue with a neutral axis. The selection of arbitrary points on the neutral axis or the selection of points on a plane, that defines a plane perpendicular to the neutral axis are entirely arbitrary, and in no way relate to the selection of the second, third and fourth patch code values. Any number of selections that define points in a mathematical color space would have been obvious to a person skilled in the art and thus is rejected under the same justification as for claim 7.

Regarding **claims 10**, the recitation of a system that comprises patches of neutral, red, green and blue code values as set forward in claim 7 has been discussed above. The placement of the patches of the first, second, third and fourth patches into groups is a design choice that would have been obvious to a person skilled in the art and thus is rejected under the same justification as for claim 7.

Regarding **claims 12**, the recitation of a system that comprises patches of neutral, red, green and blue code values as set forward in claim 7 has been discussed above. The placement of the patches of at least one of the first, second, third and fourth patches onto different sheets is a design choice that would have been obvious to a person skilled in the art and thus is rejected under the same justification as for claim 7.

Additional Notes

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.


Schwartz ('888), Wolf ('648), Harrington ('007) and Edge ('206) refer to color calibration using the measurement of color patches, and Hung ('711) refers to interpolation of points in a color space.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Timothy J. Stephany whose telephone number is 703-305-8951. The examiner can normally be reached on 8:30 am - 4:30 pm ET.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Coles can be reached on 703-305-4712. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


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